

ATTACHMENT J01

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J01 Yuma Proving Ground Electrical Distribution System

J01.1 Yuma Proving Ground Overview

Yuma Proving Ground (YPG) is located adjacent to the Colorado River in the Sonora Desert, 25 miles north of the city of Yuma, Arizona. It is approximately 180 miles east of San Diego, California and approximately 185 miles southwest of Phoenix, Arizona. YPG is generally “U-shaped” and covers over 1,300 square miles, an area larger than the state of Rhode Island. YPG’s boundaries extend 58 miles north and south and 52 miles east and west. YPG also has limited access rights over and in the KOFA Game Refuge, located in the center of the “U”.

YPG’s history dates back to 1943 when the U.S. Army Corps of Engineers opened the Yuma Test Branch (the Test Branch) along the Colorado River below the Imperial Dam to test new bridge designs, boats, vehicles and well-drilling equipment. After the war, the work at the Test Branch declined until the Installation, in January 1950, was temporarily turned over to the Corps of Engineers. Yuma Test Station (the Station) was reactivated a year later and placed under the control of the Sixth Army. The primary mission of the Station was expanded to conduct desert environmental testing of military equipment. In 1962, control of the Station was reassigned to the Army Materiel Command (AMC) and placed under the immediate control of the Army Test and Evaluation Command (ATEC). The Installation’s name was changed to Yuma Proving Ground in 1963. In 1974, YPG was designated as a Major Range and Test Facility Base (MRTFB) by the Department of Defense (DoD).

Today, YPG is a multi-purpose test facility able to test every weapon system in the ground combat arsenal. Over 2,000 military and civilian employees are employed in a wide variety of technical occupations at the Proving Ground. YPG’s major testing capabilities include:

- Ground weapons system;
- Helicopter armament and target acquisition systems;
- Artillery and tank munitions;
- Cargo and personnel parachutes, including guided systems technologies;
- Mines and mine removal systems;
- Tracked and wheeled vehicles in desert environment;
- Vibration-free, interference-free test of smart weapons systems; and
- Nuclear Regulatory Commission (NRC) license for testing of deleted uranium munitions.

YPG is generally divided into three major areas: the Laguna area, the KOFA Firing Range, and the Cibola Range. Located on the southwest corner of YPG, most of the Installation’s facilities and supporting utility infrastructure are located either in or relatively near the Laguna area. These facilities include the Main Administration Area (MAA), Yuma Test Center (YTC), Laguna Army Airfield (LAAF), KOFA Front Firing South (KFFS), KOFA Front Firing North (KFFN), Castle Dome Heliport (CDH), Castle Dome Heliport Annex (CDA), Dynamometer Test Course (DYNO), West Environmental Test Area (WETA), South Cibola Range (CIB) and North Firing Front Road Extension (NFF).

KOFA Firing Range extends 55 miles east from the Laguna area. KOFA Range is an integrated facility for the open air testing of direct and indirect fire from tanks, artillery, mortars and small missiles, and mines. The KOFA Range complex supports testing through 21 fixed, permanent firing positions, with over 310 survey firing points. The KOFA Range area includes the Front Firing areas (i.e., KFFS and KFFN), the Terminal Ballistics Evaluation, and the Extended Range Munitions area, located in the KOFA Firing Range East (KFRE) area. Cibola Range extends 40 miles north from the Laguna area. Cibola Range is the primary test area used for air delivery aircraft, aircraft armament, fire control and manned and unmanned aircraft testing. The CDH and CDA facilities are located in the southeast corner of Cibola Range.

J01.2 Electrical Distribution System Description

Yuma Proving Ground receives electrical power at three delivery points from three suppliers. The majority of the Installation's electrical requirements are delivered at 161 kV from Western Area Power Administration (WAPA) at Substation H (KOFA Substation). Wellton-Mohawk Irrigation and Drainage District (Wellton-Mohawk) provides 12.5 kV delivery points along Martinez Lake Road. The new owner will share an easement with Wellton-Mohawk to allow Wellton-Mohawk access to their Martinez Lake line. Arizona Public Service Company (APS) provides a 12.5 kV delivery point at Cibola Lake Road. In addition to the primary WAPA delivery point at Substation H, WAPA provides an alternate 69 kV supply point at Senator Wash Tap. This alternate supply point is only used as a contingency. Additionally, Wellton-Mohawk must have access to the 69 kV Senator Wash Tap line, which serves Hidden Shores.

Yuma Proving Ground owns and operates an electrical utility system consisting of:

- 10 substations;
- approximately 189.3 circuit-miles of 69 kV, 34.5 kV, and 12.5 kV pole-line;
- approximately 27.6 circuit-miles of 12.5 kV underground distribution line; and
- two photo-voltaic generating stations.

The Installation's main electrical supply point, Substation H (Facility No. SS319, which is Army owned) is located at the west end of the Main KOFA area and is supplied from WAPA's Bouse and Dome Tap 161 kV circuits. It is a conventional, outdoor, air-insulated substation consisting of two incoming 161 kV transmission line terminations, one 20/25/30 MVA 161 - 69 kV power transformer, one 1/1.25 MVA 69 - 12.5 kV power transformer, three 161 kV SF6 circuit breakers, five 69 kV circuit breakers, and one 10 MVAR capacitor bank. This substation provides the 161 - 69 kV transformation for the Installation's 69 kV transmission system and it includes voltage regulation, control, and over-current protection for two outgoing 69 kV transmission circuits and for one 12.5 kV distribution feeder.

Substation A (Facility No. 708) supplies the Main Administration Area (MAA). It is supplied from the Army's 69 kV transmission system. The substation consists of one 69 kV line termination, one 5/6.25/7 MVA 69 - 12.5 kV power transformer, three 333 kVA voltage regulators, and one 12.5 kV oil circuit recloser. It is a conventional, outdoor, air-insulated substation configured in a single main bus arrangement. This substation provides voltage regulation, control, and over-current protection for one 12.5 kV distribution feeder.

Substation B (Facility No. 2007) supplies the Laguna Army Air Field (LAAF) and the Yuma Test Center (YTC). It is supplied from the Army's 69 kV transmission system. It consists of one 69 kV line termination, one 5/6.25/7 MVA 69 - 12.5 kV power transformer, three 333 kVA voltage regulators, and one 12.5 kV oil circuit recloser. The substation is a conventional, outdoor, air-insulated substation configured in a single main bus arrangement. This substation provides voltage regulation, control, and over-current protection for one 12.5 kV distribution feeder.

Substation C (Facility No. 3540) supplies the Main KOFA area to GP18. It is supplied from the Army's 69 kV transmission system. It consists of one 69 kV line termination, one 5/6.25/7 MVA 69 - 12.5 kV power transformer, three 333 kVA voltage regulators, and one 12.5 kV oil circuit recloser. It is a conventional, outdoor, air-insulated substation configured in a single main bus arrangement. This substation provides voltage regulation, control, and over-current protection for one 12.5 kV distribution feeder.

Supplied from the Army's 34.5 kV sub-transmission system, Substation D (Facility No. 6009) supplies the Castle Dome Heliport Annex, Castle Dome Heliport, Aerostat, and the Border Patrol Station. It consists of one 34.5 kV line termination, one 5/6.25/7 MVA 34.5 - 12.5 kV power transformer, three 333 kVA voltage regulators, and one 12.5 kV oil circuit recloser. It is a conventional, outdoor, air-insulated substation configured in a single main bus arrangement. This substation provides voltage regulation, control, and over-current protection for one 12.5 kV distribution feeder.

Substation E (Facility No. 3540) provides the 69 - 34.5 kV transformation, control, and over-current protection for the Installation's 34.5 kV sub-transmission system. It is supplied from the Army's 69 kV transmission system. It is a conventional, outdoor, air-insulated substation consisting of one 69 kV line termination, one 10/12.5/14 MVA 69 - 34.5 kV power transformer, and one 34.5 kV circuit recloser. This substation provides control and protection for one outgoing 34.5 kV sub-transmission circuit.

Substation F (Facility No. 7005) supplies the Cibola Range Sites 7 through 12A. It is supplied from the Army's 34.5 kV sub-transmission system. It consists of one 34.5 kV line termination, one 3/3.75 MVA 34.5 - 12.5 kV power transformer, three 76 kVA voltage regulators, and one 12.5 kV oil circuit recloser. It is a conventional, outdoor, air-insulated substation configured in a single main bus arrangement. This substation provides voltage regulation, control, and over-current protection for one 12.5 kV distribution feeder.

Substation G (Facility No. 3540) supplies the Main KOFA area to GP18. It is supplied from the Army's 69 kV transmission system. It consists of one 69 kV line termination, one 5/6.25/7 MVA 69 - 12.5 kV power transformer, three 333 kVA voltage regulators, and one 12.5 kV oil circuit recloser. It is a conventional, outdoor, air-insulated substation configured in a single main bus arrangement. This substation provides voltage regulation, control, and over-current protection for one 12.5 kV distribution feeder.

Substation I (Facility No. SS486) supplies KLM Road, S-15, and VT Ranges. It is supplied from the Army's 34.5 kV sub-transmission system. It consists of one 34.5 kV line termination, one 1/1.25 MVA 34.5 - 12.5 kV power transformer, three 76 kVA voltage regulators, and one 12.5 kV oil circuit recloser. It is a conventional, outdoor, air-insulated substation configured in a single main bus arrangement. This substation provides voltage regulation, control, and over-current protection for one 12.5 kV distribution feeder.

Substation L (Facility No. 3540) provides the 69 - 34.5 kV transformation, control, and over-current protection for the Installation's 34.5 kV sub-transmission system. It is supplied from the Army's 69 kV transmission system. It is a conventional, outdoor, air-insulated substation consisting of one 69 kV line termination, one 10/12.5/14 MVA 69 - 34.5 kV power transformer, and one 34.5 kV circuit recloser. This substation provides control and protection for one outgoing 34.5 kV sub-transmission circuit.

YPG's transmission system consists of three 69 kV circuits. These circuits are constructed with single pole, horizontal post, overhead static wire construction practices. Two 69 kV circuits originate at Substation H and one circuit originates at WAPA's Senator Wash Tap substation.

The sub-transmission system consists of one 34.5 kV circuit which originates at Substation E. It supplies Substations D, F, and I. This circuit also directly serves a number of distribution loads along its route utilizing 34.5 kV distribution transformers.

The primary distribution system consists of eight 12.5 kV circuits plus the aforementioned 34.5 kV distribution facilities. The distribution system is composed primarily of overhead, pole-line construction (utilizing both conventional cross arm and narrow-profile open wire construction practices) with pole-mounted transformer banks. There is also a small amount of underground primary construction (primarily utilizing duct-type construction practices) with pad-mounted transformers. The majority of the distribution circuits are configured with loop tie switches to neighboring circuits for backup and redundancy. A certain portion of YPG's electrical distribution system extends into the state of California. As such, the Offeror is required to provide electrical distribution service in the states of Arizona and California. Additionally, the Offeror is required to allow the Wellton-Mohawk Irrigation and Drainage District to utilize this portion of the distribution system to provide service to the Hidden Shores Recreational Vehicle Park.

YPG's primary generation facilities consist of two photo-voltaic generating stations rated 450 kW and 105 kW (Facility Nos. PV390 and PV400, respectively). These stations are composed of solar collector panels, batteries, inverters, and control equipment, which convert sunlight directly to electrical energy. These generating stations are interconnected to the Installation's primary electrical distribution system and provide displacement of purchased energy under normal circumstances and backup capabilities to critical system components during system disturbances. The Offeror shall assume full ownership and operation and maintenance for the aforementioned photo-voltaic generating stations. The Government reserves the right to utilize the energy provided by these stations as an emergency power system for YPG's water treatment plant or to offset peak demand, or for any other purpose the Government may see fit.

J01.2.1 Inventory

The Offeror shall base the proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree, the above description and following inventory list. Under no circumstances shall the successful Offeror be entitled to any rate adjustments based on the accuracy of the description above and inventory below.

Table 1 provides a general listing of the major electrical system fixed assets for YPG's electrical distribution system included in the purchase. The system will be sold in an "as is, where is" condition without any warrant, representation, or obligation on the part of the Government to make any alterations, repairs, or improvements. All ancillary equipment attached to and necessary for operating the system, though not specifically mentioned herein, is considered part of the purchased utility.

TABLE 1 – FIXED INVENTORY

| <u>System Components</u> | <u>Quantity</u> | <u>Units</u> | <u>Approximate Year of Construction</u> |
|-------------------------------------|-----------------|--------------|---|
| <u>Overhead Lines</u> | | | |
| Transmission Feeder | 58,080 | Linear Feet | 1996 |
| Transmission Towers (2 poles/tower) | 166 | Each | 1996 |
| 3 Ph. Distrib. Open Wire Large | 35,904 | Linear Feet | 1996 |
| 3 Ph. Distrib. Open Wire Medium | 341,465 | Linear Feet | 1987 |
| 3 Ph. Distrib. Open Wire Small | 537,989 | Linear Feet | 1988 |
| 1 Ph. Distrib. Open Wire Large | 0 | Linear Feet | -- |
| 1 Ph. Distrib. Open Wire Medium | 0 | Linear Feet | -- |
| 1 Ph. Distrib. Open Wire Small | 26,066 | Linear Feet | 1996 |
| Distribution Poles | 4,708 | Each | 1989 |

| <u>System Components</u> | <u>Quantity</u> | <u>Units</u> | <u>Approximate Year of Construction</u> |
|---------------------------------|-----------------|--------------|---|
| Line Recloser, 3 Ph. | 3 | Each | 1988 |
| Group Operated Air Break Switch | 24 | Each | Unknown |
| Secondary | 0 | Linear Feet | -- |

Underground Lines

| | | | |
|--------------------------------|--------|-------------|------|
| 3 Ph. Distrib. Large | 6,841 | Linear Feet | 1996 |
| 3 Ph. Distrib. Medium | 13,295 | Linear Feet | 1996 |
| 3 Ph. Distrib. Small | 84,167 | Linear Feet | 1993 |
| 1 Ph. Distrib. Large | 59 | Linear Feet | 1996 |
| 1 Ph. Distrib. Medium | 10,411 | Linear Feet | 1987 |
| 1 Ph. Distrib. Small | 30,740 | Linear Feet | 1996 |
| Duct | 726 | Linear Feet | 1996 |
| Manhole | 1 | Each | 1994 |
| Pad Mtd. Sectionalizing Switch | 16 | Each | 1986 |
| Secondary | 0 | Linear Feet | -- |

Transformers – Pole-Type

| | | | |
|------------------|----------|------|------|
| 15 kVA & smaller | 49 | Each | 1994 |
| 25 kVA | 330 | Each | 1992 |
| 37.5 kVA | 74 | Each | 1993 |
| 50 kVA | 118 | Each | 1995 |
| 75 kVA | 57 | Each | 1995 |
| 100 kVA | 13 | Each | 1996 |
| 167 kVA | 3 | Each | 1981 |
| 250 kVA | 0 | Each | -- |
| 300 kVA | 3 | Each | 1996 |
| 333 kVA | <u>3</u> | Each | 1996 |
| Subtotal | 650 | | |

Transformers – Pad- Mount

| | | | |
|-----------------------|----|------|------|
| 1P - 15 kVA & smaller | 12 | Each | 1996 |
| 1P - 25 kVA | 12 | Each | 1996 |
| 1P - 37.5 kVA | 6 | Each | 1996 |
| 1P - 45 kVA | 0 | Each | -- |
| 1P - 50 kVA | 6 | Each | 1996 |
| 1P - 75 kVA | 14 | Each | 1996 |
| 1P - 100 kVA | 7 | Each | 1996 |
| 1P - 167 kVA | 0 | Each | -- |

| <u>System Components</u> | <u>Quantity</u> | <u>Units</u> | <u>Approximate Year of Construction</u> |
|--------------------------------------|-----------------|--------------|---|
| 3P - 75 kVA & smaller | 56 | Each | 1993 |
| 3P - 100 kVA | 1 | Each | 1996 |
| 3P - 112.5 kVA | 17 | Each | 1995 |
| 3P - 150 kVA | 23 | Each | 1995 |
| 3P - 225 kVA | 18 | Each | 1995 |
| 3P - 300 kVA | 22 | Each | 1993 |
| 3P - 500 kVA | 12 | Each | 1995 |
| 3P - 750 kVA | 4 | Each | 1992 |
| 3P - 1000 kVA | 3 | Each | 1991 |
| 3P - 1500 kVA | 0 | Each | -- |
| 3P - 2500 kVA | <u>2</u> | Each | 1996 |
| Subtotal | 215 | | |
| <u>Street Lights</u> | | | |
| Street Light Circuits | 37,934 | Linear Feet | 1985 |
| Fixtures | 279 | Each | 1984 |
| Poles | 294 | Each | 1985 |
| <u>Services</u> | | | |
| 3 Phase | 600 | Each | Unknown |
| 1 Phase | <u>700</u> | Each | Unknown |
| Subtotal | 1,300 | | |
| <u>10 – Substations</u> | | | |
| Structure / Buswork | 14 | Bay | 1991 |
| Hi side Ckt. Bkr. 69 kV | 5 | Each | 1997 |
| Hi side Ckt. Bkr. 161 kV | 3 | Each | 1997 |
| Disconnect Switch -69 kV | 18 | Each | 1997 |
| Disconnect Switch -161 kV | 6 | Each | 1997 |
| Power Transformer - 1 MVA | 3 | Each | 1997 |
| Power Transformer - 3 MVA | 2 | Each | 1994 |
| Power Transformer - 5 MVA | 4 | Each | 1994 |
| Power Transformer - 20 MVA | 1 | Each | 1997 |
| 12.5 kV OCB | 9 | Each | 1991 |
| 1P-15 kV Voltage Regulator - 76 kVA | 3 | Each | 1985 |
| 1P-15 kV Voltage Regulator - 333 kVA | 24 | Each | 1991 |
| Line Recloser, 3 Ph. | 11 | Each | 1997 |
| Control Building - 1768 SF | 1 | Each | 1997 |

| <u>System Components</u> | <u>Quantity</u> | <u>Units</u> | <u>Approximate Year of Construction</u> |
|--------------------------|-----------------|--------------|---|
| Capacitors | 10,800 | kVar | 1997 |
| MV Auto. Transfer Switch | 2 | Each | 1992 |
| Miscellaneous | 20% | | -- |

Photo-Voltaic Power Plant

| | | | |
|-----------------------------------|-----|----|------|
| PV Panels / Converter / Batteries | 105 | kW | 1997 |
| PV Panels / Converter / Batteries | 450 | kW | 1996 |

Acronyms

kVA = Nominal Kilovolt Amperes

J01.2.2 Emergency Generators

YPG has seven emergency generators connected to the electric system. The equipment and all repair responsibility remains a government function. This information is provided for information only.

Facility No. 10 @ 100 KV (located @ MAA)
Facility No. 992 @ 63 KV (located @ MAA)
Facility No. 2022 @ 30 KV (located @ MTA)
Facility No. 3023 @ 75 KV (located @ LAAF)
Facility No. 3657 @ 30 KV (located @ KFR)
Facility No. 3660 @ 115 KV (located @ KFR)
Facility No. SG318 @ 35 KV (located @ KFR)

J01.2.3 Non-Fixed Equipment and Specialized Tools Inventory

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment and tools. The successful Offeror shall provide any and all equipment, vehicles, and tools, whether included in the purchase or not, to maintain a fully operating system under the terms of this contract.

TABLE 2 – SPARE PARTS

| Dry Pack | | | | | |
|---------------------------|---------------------|----------------|------------------|--------------|-----------------|
| <u>KVA</u> | <u>Manufacturer</u> | <u>Primary</u> | <u>Secondary</u> | <u>Phase</u> | <u>Quantity</u> |
| 300 | Changler | 480 | 208/120 | 3 | 1 |
| 50 | Changler | 480 | 208/120 | 3 | 1 |
| 112.5 | GTE | 480 | 208/120 | 3 | 1 |
| Voltage Regulators | | | | | |
| <u>KVA</u> | <u>Manufacturer</u> | <u>Primary</u> | <u>Secondary</u> | <u>Phase</u> | <u>Quantity</u> |
| 250 | Siemens | 7200/7620 | | 1 | 3 |
| 76.2 | Siemens | 7200/7620 | | 1 | 3 |

Pad Mounted Transformers

| <u>KVA</u> | <u>Manufacturer</u> | <u>Primary</u> | <u>Secondary</u> | <u>Phase</u> | <u>Quantity</u> |
|------------|---------------------|----------------|------------------|--------------|-----------------|
| 15 | Jimelco | 7200/12470 | 120/240 | 1 | 1 |
| 25 | Betz | 7200/12470 | 120/240 | 1 | 7 |
| 50 | G.E. | 7200/12470 | 120/240 | 1 | 1 |
| 50 | ERM CO | 7200/12470 | 120/240 | 1 | 1 |
| 75 | Betz | 12470/7200 | 208/120 | 3 | 1 |
| 100 | Howard | 7200/12470 | 240/120 | 1 | 1 |
| 225 | T & R | 34500/19920 | 208/120 | 3 | 1 |

Switch Gear

| <u>KVA</u> | <u>Manufacturer</u> | <u>Primary</u> | <u>Secondary</u> | <u>Phase</u> | <u>Quantity</u> |
|------------|---------------------|----------------|------------------|--------------|-----------------|
| 15KV | Cooper | 15K | 600 AMPS | 3 | 1 |

Pole Mounted Transformers

| <u>KVA</u> | <u>Manufacturer</u> | <u>Primary</u> | <u>Secondary</u> | <u>Phase</u> | <u>Quantity</u> |
|------------|---------------------|----------------|------------------|--------------|-----------------|
| 5 | Solomon | 34500 | 120/208 | 1 | 1 |
| 10 | G.E. | 7200/1247 | 120/240 | 1 | 1 |
| 10 | Cooper | 7200/12470 | 120/240 | 1 | 1 |
| 15 | Matra | 7200/12470 | 120/240 | 1 | 2 |
| 15 | Betz | 19920/34.500 | 120/240 | 1 | 3 |
| 15 | Westinghouse | 7200/12470 | 120/240 | 1 | 1 |
| 15 | G.E. | 7200/12470 | 120/240 | 1 | 4 |
| 15 | Kuhman | 7200/12470 | 120/240 | 1 | 2 |
| 25 | Betz | 19920/34500 | 240/480 | 1 | 14 |
| 25 | Betz | 19920/34500 | 277/480 | 1 | 3 |
| 25 | Betz | 19920/34500 | 240/480 | 1 | 1 |
| 25 | Betz | 7200/12470 | 240/480 | 1 | 12 |
| 25 | Betz | 7200/12470 | 120/240 | 1 | 6 |
| 25 | Solomon | 34500 | 120/240 | 1 | 1 |
| 25 | Solomon | 7200/12470 | 240/480 | 1 | 1 |
| 25 | Westinghouse | 19920/34.500 | 240/480 | 1 | 1 |
| 25 | Westinghouse | 7200/12470 | 120/240 | 1 | 4 |
| 25 | Westinghouse | 12000 | 240/480 | 1 | 3 |
| 25 | Westinghouse | 12000 | 120/240 | 1 | 23 |
| 25 | Central Maloney | 12000 | 120/240 | 1 | 6 |
| 25 | G.E. | 7200/12470 | 120/240 | 1 | 4 |
| 25 | G.E. | 12000 | 120/240 | 1 | 3 |
| 25 | G.E. | 7200/12470 | 240/480 | 1 | 2 |
| 25 | T & R | 12000 | 120/240 | 1 | 1 |
| 25 | T & R | 7200/12470 | 120/240 | 1 | 4 |
| 25 | T & R | 7200/12470 | 277/480 | 1 | 6 |
| 37.5 | Magnetic | 7200/12470 | 120/240 | 1 | 3 |
| 37.5 | G.E. | 7200/12470 | 240/480 | 1 | 3 |
| 37.5 | Betz | 7200/12470 | 120/240 | 1 | 1 |
| 37.5 | Westinghouse | 12000 | 120/240 | 1 | 6 |
| 37.5 | Westinghouse | 7200/12470 | 120/240 | 1 | 3 |
| 37.5 | Cooper | 7200/12470 | 240/480 | 1 | 2 |
| 37.5 | T & R | 7200/12470 | 277/480 | 1 | 2 |
| 50 | Betz | 34500 | 12470 | 1 | 1 |

Pole Mounted Transformers

| <u>KVA</u> | <u>Manufacturer</u> | <u>Primary</u> | <u>Secondary</u> | <u>Phase</u> | <u>Quantity</u> |
|------------|---------------------|----------------|------------------|--------------|-----------------|
| 50 | Jimelco | 34500 | 480 | 1 | 3 |
| 50 | Howards | 7200/12470 | 240/480 | 1 | 1 |
| 50 | Howards | 7200/12470 | 120/240 | 1 | 2 |
| 50 | Betz | 7200/12470 | 120/240 | 1 | 4 |
| 50 | G.E. | 7200/12470 | 120/240 | 1 | 6 |
| 50 | WTS | 19920/34500 | 120/240 | 1 | 3 |
| 50 | Westinghouse | 7200/12470 | 277/480 | 1 | 2 |
| 50 | T & R | 7200/12470 | 277/480 | 1 | 3 |
| 50 | G.E. | 34500/19920 | 7200/12470 | 1 | 2 |
| 50 | Cooper | 7200/12470 | 120/240 | 1 | 3 |
| 75 | Betz | 19920/34500 | 7200/12470 | 1 | 6 |
| 75 | T & R | 19920/34500 | 7200/12470 | 1 | 3 |
| 100 | Central Maloney | 12470 | 240/480 | 1 | 3 |
| 100 | Solomon | 7200/12470 | 120/240 | 1 | 3 |
| 150 | B & B | 19920/34500 | 7200/12470 | 1 | 3 |
| 333 | Betz | 19920/34500 | 7200/12470 | 1 | 3 |
| 1500 | Westinghouse | 34500 | 12470 | 1 | 1 |

As detailed in **Table 3**, no specialized equipment or vehicles for maintenance of YPG's electrical distribution system will be available to the new owner of the system.

TABLE 3 – SPECIALIZED QUIPMENT AND VEHICLES

| Description | Quantity | Location | Maker |
|--------------------|-----------------|-----------------|--------------|
| None. | | | |

J01.2.4 Electrical Distribution System Manuals, Drawings, and Records Inventory

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4 - MANUALS, DRAWINGS, AND RECORDS

| Quantity | Item | Description | Remarks |
|--|-------------|--------------------|----------------|
| The Installation maintains a limited collection of manuals, drawings and records on installed components of the electric system. Available information will be included in the Technical Library. This information or copies thereof will be transferred during the transition period. Yuma Proving Ground will retain originals and receive updates on system as alterations are completed. | | | |

J01.2.4 Known System Deficiencies

Table 5 details the planned upgrade projects associated with the known deficiencies in the electrical distribution system. However, it is the responsibility of the Offeror to perform due diligence and make their own determination regarding known and unknown deficiencies within the systems.

TABLE 5 - KNOWN DEFICIENCIES

| <u>Project No.</u> | <u>Description</u> | <u>Location</u> |
|--------------------|--|---------------------|
| 0360 | Replace Poles to Substation I | KOFA Firing Range |
| 0365 | Replace Transformers/Riser | Cibola Firing Range |
| 0367 | Repair UG Electrical Lines | Yuma Proving Ground |
| 0561 | Replace OCR | Substation D |
| 0599 | Replace Transformers | Facility No. 0530 |
| 0982 | Repair OH Electrical Lines | Twin Peaks |
| 0983 | Repair OH Electrical Lines | WGUN |
| 0984 | Repair OH Electrical Lines | KOFA Firing Range |
| 0996 | Repair OH Electrical Lines | Yuma Proving Ground |
| 0997 | Repair OH Electrical Lines | Yuma Proving Ground |
| 1024 | Repair OH Electrical Lines | Yuma Proving Ground |
| 1026 | Repair OH Electrical Lines | Highway 95 |
| 1027 | Repair OH Electrical Lines | Substation D |
| 1046 | Repair OH Electrical Lines | KOFA Firing Range |
| 1140 | Repair OH Electrical Line - FF Road to GP17A | Yuma Proving Ground |
| 1141 | Repair OH Electrical Line - T-31 to PL Road | Yuma Proving Ground |
| 1142 | Repair OH Electrical Line - FF Road to 3740 | Yuma Proving Ground |
| 1186 | Electrical Inventory | Yuma Proving Ground |
| 1545 | Replace OH Electrical Lines - to Post 42 | Yuma Proving Ground |
| 2357 | Provide UG Power | CM-1 |
| 2600 | Extend Power to HEX 19.1 | KOFA Firing Range |
| 2602 | Extend Power to GP4.7 | KOFA Firing Range |
| 2603 | Extend Power - from Tower M to Brown | Yuma Proving Ground |
| 2604 | Extend Power - from Brown to SWTR | Yuma Proving Ground |
| 2605 | Extend Power to REG 0-5 | KOFA Firing Range |
| 2606 | Extend Power to Countermine | KOFA Firing Range |
| 2607 | Extend Power to CM-1 | KOFA Firing Range |
| 2608 | Extend Power to Stinger Poles | KOFA Firing Range |
| 2609 | Extend Power to LaPosa | KOFA Firing Range |
| 2624 | Extend Power | FIRE |
| 2631 | Install Marker Balls | Site 8 |
| 2760 | Radio Shelter | Cibola Firing Range |

Based on a previous study prepared for Yuma Proving Ground, no existing equipment contained PCB contaminants. However, one transformer on the Installation was recently determined to have PCB material.

J01.3 Current Service Description

Yuma Proving Ground currently uses government-owned facilities and resources to provide the electrical distribution utility service. YPG receives electrical power at three delivery points from three suppliers. The majority of the Installation's electrical requirements are delivered at 161 kV from Western Area Power Administration (WAPA) at Substation H (KOFA Substation). Wellton-Mohawk Irrigation and Drainage District (Wellton-Mohawk) provides a 12.5 kV delivery point at Martinez Lake Road. Arizona Public Service Company (APS) provides a 12.5 kV delivery point at Cibola Lake Road. In addition to the primary WAPA delivery point at Substation H, WAPA provides an alternate 69 kV supply point at Senator Wash Tap. This alternate supply point is only used as a contingency. After the electric power enters the installation, it is transferred to the YPG facilities through government-owned lines.

J01.4 Secondary Metering

The Installation may require secondary meters for internal billing of their reimbursable customers, utility usage management and energy / water conservation monitoring. The Offeror shall assume full ownership and responsibility for existing and future secondary meters IAW Paragraph C.3, *Future Secondary Meters*.

J01.4.1 Existing Secondary Meters

Table 6 provides a listing of the secondary meters which will be transferred to the Offeror. The Offeror shall provide meter readings once a month for all secondary meters.

TABLE 6 - EXISTING SECONDARY METERS

| <u>Meter Location</u> | <u>Meter Description</u> |
|-------------------------------|--------------------------|
| Qwest Bldg 5 | |
| Corps of Engineers Bldg 309 | |
| Commissary Bldg 536 | |
| Adelpia Bldg 526 | |
| Price School Bldg 1010 | |
| TDME Bldg 2104 | |
| Border Patrol Trailer | |
| Aerostat | |
| Training Facilities Bldg 110 | |
| Training Facilities Bldg 124 | |
| Training Facilities Bldg FOB | |
| Training Facilities Bldg 6071 | |

J01.4.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 7**. New secondary meters shall be installed IAW Clause C.13, *Operational Transition Plan*. After installation, the Contractor shall maintain and read these meters IAW Clause C.3 and J01.5 below. Although at the present time, the Installation does not require any new meters to be installed; however, if meters are required in the future, the Contractor shall comply with Clause C.3.3. New buildings and fully renovated buildings will require secondary meters.

TABLE 7 - NEW SECONDARY METERS

| <u>Meter Location</u> | <u>Description</u> |
|-----------------------|--------------------|
| None. | |

J01.5 Submittals

The Contractor shall provide the Government monthly submittals for the following:

Invoice (IAW G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to the Contracting Officer's designee. (This information will be provided upon award.)

Outage Report. The Contractor's monthly outage report will be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall include the following information for Scheduled and Unscheduled outages:

Scheduled: Requestor, date, time, duration, facilities affected, feedback provided during outage, outage notification form number, and digging clearance number.

Unscheduled: Include date, time and duration, facilities affected, response time after notification, completion times, and feedback provided at time of outage, specific item failure, probability of future failure, long-term fix, and emergency digging clearance number.

Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to the Contracting Officer's designee. (This information will be provided upon award.)

Meter Reading Report. If required by the Contracting Officer, the monthly meter reading report shall show the current and previous month readings for all secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to the Contracting Officer's designee. (This information will be provided upon award.)

System Efficiency Report. If required by Paragraph C.3, the Contractor shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to the Contracting Officer's designee. (This information will be provided upon award.)

J01.6 Energy Savings and Conservation Projects

IAW Clause C.3, *Utility Service Requirement*, there are no projects planned or currently executed by YPG for energy conservation purposes..

J01.7 Service Area

IAW Paragraph C.4, *Service Area*, the service area is defined as all areas within the YPG boundary, and the line extending west to the switch station known as the "Army Tap".

J01.8 Off-Installation Sites

This line and switch station known as the "Army Tap" extend into and exist within the state of California. YPG maintains an easement to access this line and switch station.

J01.9 Specific Transition Requirements

IAW Clause C.13, *Operational Transition Plan*, **Table 8** lists service connections and disconnections required upon transfer.

TABLE 8 - SERVICE CONNECTIONS AND DISCONNECTIONS

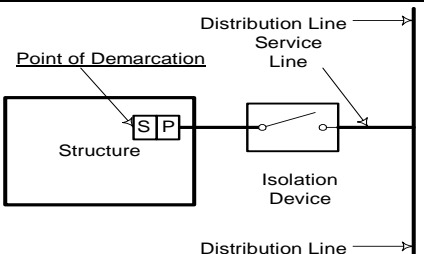
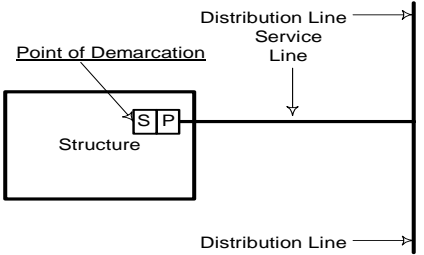
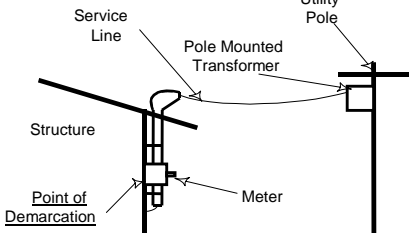
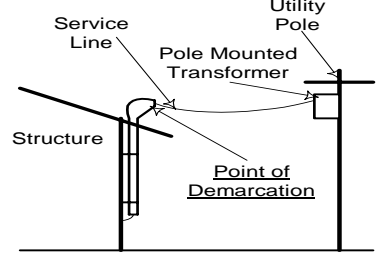
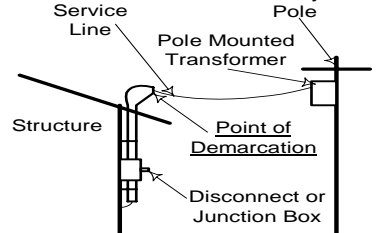
| Location | Description |
|----------|-------------|
| None. | |

J01.10 Electric Distribution System Points of Demarcation

The point of demarcation is defined as the point on the distribution system where ownership changes from the Grantee to the building owner. This point of demarcation will typically be at the point the utility enters a building structure or the load side of a transformer within a building structure. During the operation and maintenance transition period, concurrence on specific demarcation points will be documented during the joint inventory of facilities.

TABLE 9 – LINES OF DEMARCATION

| Point of Demarcation | Applicable Scenario | Sketch |
|---|---|--------|
| Point of demarcation is the transformer secondary terminal spade. | Pad Mounted Transformer located outside of structure with underground service to the structure and no meter exists. | |
| Down current side of the meter. | Residential service (less than 200 amps and 240V 1-Phase), and three phase self contained meter installations. Electric Meter exists within five feet of the exterior of the building on an underground secondary line. | |
| Point of demarcation is the meter. | Three Phase CT metered service. | |

| Point of Demarcation | Applicable Scenario | Sketch |
|--|---|---|
| Secondary terminal of the transformer inside of the structure. | Transformer located inside of structure and an isolation device is in place with or without a meter. Note: Utility Owner must be granted 24-hour access to transformer room. |  A schematic diagram showing a rectangular box labeled 'Structure' containing a small box with 'S' and 'P' inside. A line labeled 'Point of Demarcation' points to this box. To the right of the structure is a box labeled 'Isolation Device'. A line labeled 'Service Line' connects the structure to the isolation device. From the isolation device, a line labeled 'Distribution Line' extends to the right. Arrows indicate the direction of flow from the structure towards the distribution line. |
| Secondary terminal of the transformer inside of the structure. | Transformer located inside of structure with no isolation device in place. Note: Utility Owner must be granted 24-hour access to transformer room. |  A schematic diagram showing a rectangular box labeled 'Structure' containing a small box with 'S' and 'P' inside. A line labeled 'Point of Demarcation' points to this box. A line labeled 'Service Line' connects the structure to a vertical line on the right. From this vertical line, a line labeled 'Distribution Line' extends to the right. Arrows indicate the direction of flow from the structure towards the distribution line. |
| Point of demarcation is the meter. | Electric meter is connected to the exterior of the building on an overhead secondary line. |  A diagram showing a 'Structure' on the left and a 'Utility Pole' on the right. A 'Service Line' runs from the structure to a 'Pole Mounted Transformer' on the utility pole. A 'Meter' is located on the service line between the structure and the transformer. A line labeled 'Point of Demarcation' points to the meter. A 'Distribution Line' is shown running horizontally across the top of the diagram. |
| Point of demarcation is the point where the overhead conductor is connected to the weather head. | Pole-Mounted Transformer located outside of structure with secondary attached to outside of structure with no meter. |  A diagram showing a 'Structure' on the left and a 'Utility Pole' on the right. A 'Service Line' runs from the structure to a 'Pole Mounted Transformer' on the utility pole. A line labeled 'Point of Demarcation' points to the connection point between the service line and the transformer. A 'Distribution Line' is shown running horizontally across the top of the diagram. |
| Point of demarcation is the point where the overhead conductor is connected to the weather head. | Service may be overhead or underground. A disconnect switch or junction box is mounted to the exterior of the structure with no meter. |  A diagram showing a 'Structure' on the left and a 'Utility Pole' on the right. A 'Service Line' runs from the structure to a 'Pole Mounted Transformer' on the utility pole. A 'Disconnect or Junction Box' is located on the exterior of the structure. A line labeled 'Point of Demarcation' points to this box. A 'Distribution Line' is shown running horizontally across the top of the diagram. |